

### **REMARKS**

Claims 15-30, 38, 41-46, 51-55, 57, 61, 62, and 65-70 are currently pending in the subject application. Claims 28-30, 38, 46, 51-55, and 57 are withdrawn from consideration. Claims 15, 53, and 57 are independent.

Applicants request, in the next Office action, that the Examiner indicate the acceptability of the drawings filed on August 26, 2003.

#### **A. Introduction**

In the outstanding Office Action Made Final, mailed June 25, 2009,

1. claims 15-17, 19-23, 41, 61, and 62 were rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 175,460 (“the EP ’460 reference”) in view of EP 164,834 (“the EP ’834 reference”);
2. claims 18, 27, and 42-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the EP ’460 reference in view of the EP ’834 reference and U.S. Patent No. 5,772,905 to Chou (“the Chou reference”);
3. claims 24-26 and 65-70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the EP ’460 reference in view of the EP ’834 reference and U.S. Patent No. 4,731,155 to Napoli et al. (“the Napoli et al. reference”); and
4. claims 15-27, 41-45, 61, 62, and 65-70 were rejected on the ground of nonstatutory obviousness-type double-patenting as being unpatentable over claims 1-29 of U.S. Patent No. 6,610,166.<sup>1</sup>

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<sup>1</sup> A Terminal Disclaimer submitted January 7, 2007 has not been officially reviewed and accepted for compliance.

B. Asserted Obviousness Rejection of Claims 15-17, 19-23, 41, 61, and 62

In the outstanding Office Action Made Final, claims 15-17, 19-23, 41, 61, and 62 were rejected under 35 U.S.C. § 103(a) as being unpatentable the EP '460 reference in view of the EP '834 reference. This rejection is respectfully traversed for at least the reasons set forth below.

Claim 15 recites, in part:

separating the support substrate through the first and second opposing parallel surfaces to form individual optical elements, each individual optical element including the hardened replica and the support substrate.

The Office action notes that the EP '460 reference fails to teach such separating, and relies on the separation taught in the EP '834 reference.<sup>2</sup> While the EP '834 reference may disclose separation of a plurality of optical elements to form individual optical elements, applicants respectfully submit that no motivation exists to combine the cited references in the manner suggested in the outstanding Office action. Further, even if, *arguendo*, such separation is performed on a diffraction grating disclosed in the EP '460 reference, a resultant product would not include a plurality of individual optical elements, as recited in claim 15.

(a) No Motivation to Combine the Teachings of the Cited References

Applicants respectfully submit that there is no motivation to combine the cited references in the manner asserted in the outstanding Office action. Firstly, the outstanding Office action fails to provide proper motivation for combining the teachings of the cited references as required by *KSR International*. Secondly, there is no motivation to combine the teachings of the EP '460 reference and the EP '834 reference because such a combination would modify the principle of operation of the primary reference, i.e., the EP '460 reference, thereby rendering it unsuitable for its intended purpose.

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<sup>2</sup> Office action dated June 25, 2009, page 2.

(i) Failure to Establish a *Prima Facie* Case of Obviousness in view of *KSR International*

In the Office action, it is asserted that combination of the cited references would have been obvious to a person of ordinary skill in the art “to form individual optical elements as desired.”<sup>3</sup> Applicants respectfully submit that this statement is conclusory and does not comprise an “explicit rationale” as required by *KSR International*.<sup>4</sup>

For example, the EP '460 reference is *specifically* directed toward formation of a *diffraction grating*<sup>5</sup>, i.e., an optical device that includes a *plurality of patterns* that split light into wavelengths.<sup>6</sup> Nothing in the references provides or even remotely suggests for one of ordinary skill in the art to separate *a substrate of a diffraction grating that requires a plurality of patterns* into individual discrete patterns, i.e., optical elements as taught by the EP '834 reference. In other words, the Office action fails to provide an explicit rationale explaining why a person of ordinary skill in the art reading the primary reference, i.e., the EP '460 reference, would be motivated to separate a diffraction grating into its individual patterns. Therefore, since an explicit analysis as required by *KSR International* is not provided in the outstanding Office action, a *prima facie* case of obviousness has not been established.

(ii) No Motivation to Combine the EP '460 and EP '834 References

In the Office action, it is asserted that combination of the cited references would have been obvious to a person of skilled in the art “to form individual optical elements as desired.”<sup>7</sup> Applicants respectfully disagree at least because such a combination would modify the principle of operation of the primary reference, i.e., the EP '460 reference.

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<sup>3</sup> Office action of September 18, 2008, pages 2-3.

<sup>4</sup> *KSR International, Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007).

<sup>5</sup> The EP '460 reference, Abstract.

<sup>6</sup> See., e.g., Wikipedia at [http://en.wikipedia.org/wiki/Diffraction\\_grating](http://en.wikipedia.org/wiki/Diffraction_grating).

<sup>7</sup> Office action of September 18, 2008, pages 2-3.

In particular, the EP '460 reference is specifically directed toward formation of a diffraction grating<sup>8</sup> that *requires* a plurality of patterns for proper functioning. In other words, while the EP '460 reference may disclose using a master 10 to imprint a replica of elements 12, it is respectfully submitted that the elements 12 are not individual optical elements, but together form a grating pattern, which is the optical element. Therefore, modification of the EP '460 reference to include separation of the substrate into discrete individual patterns, i.e., in view of the EP '834 reference, would modify the principle of operation of the diffraction grating in the EP '460 reference.<sup>9</sup> In fact, modification of the EP '460 reference in view of the EP '834 reference, as suggested in the outstanding rejection, would render the diffraction grating of the EP '460 reference unsatisfactory for its intended use because separated elements 12 would not function as a diffraction grating.<sup>10</sup> In view of MPEP § 2143.01, paragraphs V and VI, applicants respectfully submit that no motivation for a person of ordinary skill in the art exists for combining the teachings of the cited references.

(b) Failure to Teach All the Elements of Claim 15

Further, even if, *arguendo*, one of ordinary skill in the art were to attempt to combine the teachings of the cited references in the manner suggested in the outstanding Office action, the resultant combination would fail to teach at least “separating the support substrate... to form individual optical elements, each individual optical element including the hardened replica and the support substrate,” as recited in claim 15.

As discussed previously, while the EP '460 reference may disclose using a master 10 to imprint a replica of elements 12, a *plurality* of elements 12 is required to form a grating pattern. Therefore, an individual element 12 cannot be interpreted as an individual optical element. In other words, even if, *arguendo*, a person of ordinary skill in the art were to attempt to separate

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<sup>8</sup> The EP '460 reference, Abstract.

<sup>9</sup> See, MPEP § 2143.01, paragraph V.

<sup>10</sup> See, MPEP § 2143.01, paragraph VI.

the elements 12 in the EP '460 reference into individual elements, no individual optical elements would be formed,<sup>11</sup> but only portions that cannot function for their intended purpose. Therefore, a combination of the teachings of the cited references would not provide at least "separating the support substrate... to form individual optical elements, each individual optical element including the hardened replica and the support substrate," as recited in claim 15.

(c) Response to Argument in the Office Action

With respect to the assertion in the outstanding Office action that it would have been obvious to a person of ordinary skill in the art to form a plurality of diffraction gratings on a single substrate 16 in view of the EP '460 reference, and then to separate the plurality of diffraction gratings into individual elements in view of the EP '834 reference,<sup>12</sup> applicants respectfully disagree.

In particular, it is asserted in the outstanding Office action that it would have been obvious to have modified the method to include making more than one grating to produce multiple articles in a single pressing.<sup>13</sup> Applicants respectfully disagree and submit that *no portion* of the EP '460 reference discloses or even remotely suggests formation of multiple gratings in a single pressing on a *single substrate*, much less a subsequent separation of the substrate. For example, as the EP '460 reference specifically discloses that the substrate 16 is formed of metal, e.g., steel,<sup>14</sup> a person of ordinary skill in the art would not be motivated to form multiple diffraction gratings on a single substrate in order to avoid sowing through a steel substrate. In fact, the disclosure of a steel substrate in the EP '460 reference teaches away from separating the substrate.

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<sup>11</sup> See, for example, page 5 of the EP '460 reference, in which an advantage of having "no limit in the length of the replica gratings" is noted.

<sup>12</sup> Office action of June 25, 2009, page 2.

<sup>13</sup> Id.

<sup>14</sup> The EP '460 reference, page 2, line 2.

Further, even if, *arguendo*, a person of ordinary skill in the art were to attempt to form a plurality of diffraction gratings on a single substrate, the cited references fail to teach or even remotely suggest “separating the support substrate... to form individual optical elements, each individual optical element including the hardened replica and the support substrate,” as recited in claim 15. In particular, *no portion* of the cited references teaches or even remotely suggests separating a plurality of diffraction gratings, while each diffraction grating includes a plurality of optical patterns 12.

For example, since each diffraction grating includes, e.g., a first plurality of patterns corresponding to the elements 12, multiple diffraction gratings would include a total of a second plurality of patterns, i.e., a sum of the first plurality pluralities. *No portion* of the cited references teaches or even remotely suggests separating the *second plurality* of elements 12 into separate multiple diffraction gratings, such that each separate diffraction grating includes the *first plurality* of elements 12.<sup>15</sup>

In view of the above, it is respectfully submitted that the teachings of the EP '460 reference and the EP '834 reference cannot be combined. Further, neither the EP '460 reference nor the EP '834 reference, either alone or in combination, suggest, much less disclose, the limitations as recited in independent claim 15. The remaining rejected claims depend, either directly or indirectly, from claim 15, and are believed to be allowable for at least the reasons set forth above. It is respectfully requested that this rejection be reconsidered and withdrawn.

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<sup>15</sup> As an additional matter, applicants respectfully note that the assertion in the outstanding Office action that “making of multiple articles simultaneously employing a method making only a single article is considered within the skill level of the art if such involves merely a duplication of parts” is misapplied. In particular, duplication of parts in the MPEP addresses multiplication of parts in *devices* (MPEP § 2144.04) and requires similar facts as the cases examined by the courts. Further, MPEP § 2144.04 *cannot* be used as a sole rationale to support obviousness rejection of critical features of an invention.

C. Asserted Obviousness Rejection of Claims 18, 27, and 42-45

In the outstanding Office action, claims 18, 27, and 42-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the EP '460 reference in view of the EP '834 reference and the Chou reference. This rejection is respectfully traversed for at least the reasons set forth below.

The rejected claims depend, either directly or indirectly, from claim 15. The Chou reference fails to provide the teachings noted above as missing in Section B. Therefore, it is respectfully submitted that these claims are allowable for at least the reasons claim 15 is allowable. It is respectfully requested that this rejection be reconsidered and withdrawn.

D. Asserted Obviousness Rejection of Claims 24-26 and 65-70

In the outstanding Office Action Made Final, claims 24-26 and 65-70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the EP '460 reference in view of the EP '834 reference and the Napoli et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

The rejected claims depend, either directly or indirectly, from claim 15. The Napoli et al. reference fails to provide the teachings noted above as missing in Section B. Therefore, it is respectfully submitted that these claims are allowable for at least the reasons claim 15 is allowable.<sup>16</sup> It is respectfully requested that this rejection be reconsidered and withdrawn.

E. Asserted Double-Patenting Rejection of Claims 15-27, 41-45, 61, 62, and 65-70

In the outstanding Office Action Made Final, claims 15-27, 41-45, 61, 62, and 65-70 were rejected on the ground of nonstatutory obviousness-type double-patenting as being

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<sup>16</sup> Further, it is submitted that the Napoli et al. reference fails to provide any of the additional limitations recited in these dependent claims. For example, there is no teaching or suggestion of securing a *second substrate*, i.e., another substrate as recited in claim 67, having optical lithographs thereon to a *first substrate*, i.e., the substrate recited in claims 15, having the replicas before separating, as recited in claim 67.

unpatentable over claims 1-29 of U.S. Patent No. 6,610,166. A terminal disclaimer was submitted on January 16, 2007, thereby obviating this rejection.

F. Conclusion

The above remarks demonstrate the failings of the outstanding rejections, and are sufficient to overcome them. However, while these remarks may refer to particular claim elements, they are not intended to, nor need they, comprehensively address each and every reason for the patentability of the claimed subject matter over the applied art. Accordingly, applicants respectfully submit that the claims are allowable for reasons including, but not limited to, those set forth above, and patentability of the claims does not depend solely on the particular claim elements discussed above.

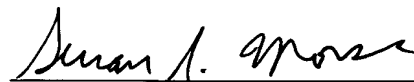
If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

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